EXHIBIT A

EPA/EPO/OEB
D-80298 München

+49 89 2399-0
TX 523 656 epmu d
FAX +49 89 2399-4465

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Jönsson, Christer
Eka Chemicals AB, Patent Department, Box
11556
100 61 Stockholm
SUÈDE

Application No. / Patent No.	Ref.	Date
99 927 016.8 - 2124 / 1080272 /	3151 EP (PCT)	01.09.2005
Proprietor Akzo Nobel N.V.		

Decision rejecting the opposition (Article 102(2) EPC)

The Opposition Division - at the oral proceedings dated 23.06.2005 - has decided:

The opposition(s) against the European patent EP-B- 1080272 is/are rejected.
The reasons for the decision are enclosed.

Possibility of appeal
This decision is open to appeal. Attention is drawn to the attached text of Articles 106 to 108 EPC.

Opposition Division:

Chairman:	Schweissguth, M
2nd Examiner:	Mangin, S
1st Examiner:	Naeslund, P

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Goeller, A
Formalities Officer
Tel. No.: +49 89 2399-8013

Enclosure(s): 13 page(s) reasons for the decision (Form 2916)
Wording of Articles 106 - 108 (Form 2019)

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I. SUMMARY OF FACTS AND SUBMISSIONS

I. European patent No. EP-B1-1 080 272 was granted on 18.06.2003 (Bulletin 2003/25) with 16 claims based on application No. EP 99927016.8 (PCT/SE99/00677) filed on 26.04.1999 and claiming priority of 27.04.1998 from EP98850067 and US83253 P.

Owners of the patent are AKZO NOBEL N.V., 6800 SB Arnhem (NL) and Eka Chemicals AB, 445 80 Bohus (SE) (hereinafter referred to as the patent proprietors).

II. Notice of opposition was filed by letter of March 17, 2004 by Raiso Chemicals Ltd. (FI) (hereinafter referred to as the opponent), requesting revocation of the patent under Article 100 (a) EPC, as a whole on the grounds that its subject-matter is not new, nor inventive, in view of prior art. To substantiate his opinion the opponent cited the following documents:

D1: EP 0 805 234 A2
D2: EP 0 752 496 A2
D3: EP 0 335 575 A2
D4: US 5,098,520
D5: WO 95/02088
D6: "Paper Machine Corrosion", pages 598-599
D7: EP 0 735 186 A2
D8: US 5,466,338
D9: WO98/06898
D10: European Commission, Cost E1, Paper recycling, An introduction to problems and their solutions, Edited by M.A. Blanco, C. Negro and J. Tijero, 1997
D11: Influence of closed systems on chemical flocculation, Angeles Blanco, University of Madrid, Spain, Towards the closed system-threats and opportunities, 1 March 1994
D12: US 4,749,444
D13: US 5,595, 629

D14: US 5, 708, 071
D15: EP 0 877 120
D16: US 5, 292, 404

As an auxiliary request, oral proceedings were requested.

III. The proprietors dismissed the arguments brought forward by the opponent in a letter of 03.01.2005 and requested that the opposition be rejected and the patent maintained in unamended form. As an auxiliary measure, oral proceedings were requested. The proprietors also cited two new documents in support of their case:

Ullmann's Encyclopaedia of Industrial Chemistry, Vol. A18,1991, Paper and Pulp, pages 572-573 (hereinafter referred to as D17) and

WO96/35838 (hereinafter referred to as D18);

and further referred to an Experimental Report No.1 submitted during the examination procedure of the application as well as a signed declaration in support of the Report.

IV. In a communication dated 11.02.2005, the opposition division summoned the parties to oral proceedings. In the annex to the summons the different issues to be discussed were briefly set out.

V. In a further letter dated April 21, 2005 the opponent cited further documents, namely:

D19: Natürliches $CaCO_3$ in holzhaltigen Systemen, Wochenblatt für Papierfabrikation 18,1983;

D20: D.J. Barnett and L. Grier, Pulp & Paper, April 1996, pp. 89-95;

D10' A. Blanko et al., 50th APPITA, Annual General Conference Auckland, New Zealand, 6-10 May, 1996, Vol. 2, pp. 435-442

and maintained that the opposed patent should be revoked.

VI. In a further letter of 22 April, 2005 the proprietors again met the arguments put forward by the opponent, including those of the last submission, and asserted that the invention was both novel and inventive over the cited prior art. Furthermore, the proprietors requested five auxiliary requests to be considered by the division in case the main request were rejected. As a further support for their case the proprietors cited the following pieces of evidence:

Declaration by Professor Tom Lindström (hereinafter referred to as D21)
Declaration by Mr. John Nicholass (hereinafter referred to as D22)
Experimental Report No. 1 (hereinafter referred to as D23)

VII. The scheduled oral proceedings took place on June 23, 2005.

VIII. The wording of valid claim 1 according to the patent-in-suit reads as follows:

" A process for the production of paper from a suspension containing cellulosic fibres, and optional fillers, comprising adding to the suspension a drainage and retention aid comprising a cationic organic polymer, forming and dewatering the suspension on a wire, ***characterised in that*** *the cationic organic polymer has an aromatic group and that the suspension which is dewatered on the wire has a conductivity of at least 2.0 mS/cm. "*

IX. For further details concerning the procedure, attention is drawn to the file and the minutes of the oral proceedings.

II. REASONS FOR THE DECISION

1. The opposition is admissible because it meets the requirements of Articles 99(1), 100 EPC and of Rules 1(1) and 55 EPC.

2. Subject-matter of the patent-in-suit

The patent concerns a process for the production of paper from a suspension containing cellulosic fibres, and optional fillers, comprising adding to the suspension a drainage and retention aid comprising a cationic organic polymer, forming and dewatering the suspension on a wire, wherein the cationic organic polymer has an aromatic group and wherein the suspension which is dewatered on the wire has a conductivity of at least 2.0 mS/cm.

3. Novelty

After having perused the documents cited by the opponent the division comes to the conclusion that the subject-matter of claim 1 is novel, for the following reasons:

Among other differences, none of the cited documents teaches a suspension having a conductivity of at least 2.0 mS/cm. There is no teaching of a papermaking process in the prior art cited comprising adding to a cellulosic suspension a cationic organic polymer having an aromatic group and wherein the suspension that is dewatered on a wire has a conductivity of at least 2.0 mS/cm.

During the oral proceedings it was alleged by the opponent that claim 1 of the present patent is implicitly anticipated by the prior art documents **D1, D2** and **D12.**

The division can not share this view. The opponent has not been able to convince the division that a conductivity of at least 2.0 mS/cm as required by claim 1 of the disputed patent is **directly** and **unambiguously** disclosed by the process according to any of these documents (see Guidelines for Examination in the EUROPEAN PATENT OFFICE, Part C, Chapter IV-7.5). The requisite standard of proof is "beyond reasonable doubt". As stated in T793/93:-

*"In deciding what is or is not the **inevitable** outcome of an express literal disclosure in a particular prior art document, a standard proof much stricter than the balance of probability, to wit "beyond all reasonable doubt" needs to be applied. It follows that if any reasonable doubt exists as to what might or might not be the result of carrying out the literal disclosure and instructions of a prior art document, in other words if there remains a "grey area" then the case on anticipation based on such a document must fail"* (emphasis added).

Document **D1** (see in particular page 3, lines 21-31; page 4, lines 35-50; page 7, lines 26-55; example 1-3, 6-8 and figure 4) concerns a papermaking process which comprises adding a cationic dispersion polymer and a microparticle to an aqueous cellulosic papermaking slurry. The dispersion polymer can be selected from the group consisting of copolymers of acrylamide and dimethylaminoethylacrylate methyl chloride quaternary salt (DMAEA.MCQ), dimethylaminoethylmethacrylate methyl chloride quaternary salt (DMAEM.MCQ), dimethylaminoethylmetacrylate benzyl chloride quaternary salt (DMAEM.BCQ) and diallyldimethylammonium chloride (DADMAC).

The opponent argued that a cellulosic stock comprising 30% calcium carbonate filler at the pH disclosed necessarily would exhibit a concentration of Ca^{2+}-ions corresponding to a conductivity of 3.1 mS/cm, i.e. within the range

of claim 1. The opponent in this respect referred to **D19** and its enlarged figure 5b as well as table 3 of the opposed patent (see **ANNEX 1** and **ANNEX 2** of the minutes). Likewise, a "corrugated coated test stock" as known from **D1** would by definition lead to a conductivity clearly falling within this range.

The division can not share this view. The fact that a corrugated coated test stock is used does not necessarily mean that the cellulosic suspension has a conductivity of at least 2.0 mS/cm, nor does the presence of $CaCO_3$ as a filler at the particular pH cited; the conductivity of a cellulosic suspension of this kind depends on a multitude of factors as is well known to the skilled person in the field, such as type of fibrous raw material, type and quality of the manufactured product, manufacturing conditions, source, degree of closure of the water system, efficiency of internal treatments to clarify and reuse the process streams, etcetera.

Therefore, it is submitted by the division, without having a detailed, very thorough knowledge of a particular process it is for all practical purposes impossible for one skilled in the art to estimate or predict the conductivity of a particular furnish.

Whilst it might be that **some** furnishes of the prior art based on OCC, such as that one referred to by the opponent, in **D11**, on page 10 could show conductivity values falling within the claimed range, this is far from saying that all **necessarily** must fulfil this criterion. In this particular case it could very well be that the system was highly closed, the corrugated board included a particular high amount of impurities and/or the fresh water for the mill originated from an area with so-called hard water. Thus in this respect the division fully agrees with the proprietor.

In fact in this respect the division sees no need to accede to an evaluation of the data/declarations of the documents **D21-D23** or the Experimental Report No. 2 (see **ANNEX 3** of the minutes). However, such a view is also supported by the teaching in **D10'** (see page 1, col. to the right, last paragraph). As to the disclosure in table 1 of **D10'** where a conductivity value of white water

compositions is given between 3-11 mS/cm the division finds it reasonable to assume that it originates from trials carried out on white water based on sources including also those containing extremely high levels of impurities (comprising high levels of ions such as i.a. Ca^{2+}). Such water sources as is well known amongst those skilled in the art can be found e.g. on the Iberian peninsula.

And furthermore, **D10'** on page 437 under "Inorganic ions" states the **normal** range of conductivities from 500 to 10000μS/cm, i.e. 0.5 to 10mS/cm, thus to a great extent also outside the required values according to the range stated in claim 1 of the disputed patent. In addition, as to the formula in **D19**, on page 669, the division agrees with the opinion of the proprietor: the equation is a function not only of the pH and the temperature, but also of time and size of the particles; papermaking processes are fast and there is no time for an equilibrium to be attained. The diagram of conversion from pH to Ca^{2+} might thus be correct in the specific case, however, it can not be generalized to be valid for just any $CaCO_3$ comprising composition, let alone such in the form of a papermaking stock.

Accordingly, the subject-matter of claim 1 is novel over **D1**.

Document **D2** (see in particular abstract; page 7, lines 31-36; example 1) relates to a process for the production of paper from a suspension of cellulose containing fibres, and optional fillers, wherein a low molecular weight cationic organic polymer, a high molecular weight cationic or amphoteric polymer and anionic inorganic particles are added to the suspension and the suspension is formed and drained on a wire.

There is also here no disclosure of a conductivity of the stock, let alone within the range as required by claim 1. By in essence the same reasoning the opponent argued that **D2** discloses a stock comprising 23% grinded marble ($CaCO_3$) and 23% coated broke having an ash content of 30% at a pH of 7. This stock would therefore exhibit a conductivity within the range as claimed corresponding to a concentration of 890 ppm Ca^{2+} and a conductivity of 5.1

mS/cm.

However, the opposition division also rejects this document as being related to assumptions, for the same reasons as already stated in relation to **D1.** Moreover, and this is well known in the field, the wet end part of the papermaking operation is chemically highly complex and not easily calculable; the available data given in **D2** does not necessarily mean that a conductivity of at least 2.0 mS/cm is reached.

Accordingly, the subject-matter of claim 1 is novel also over **D2.**

Document **D12** (see in particular col. 1, lines 39 to 41; col. 4, lines 16 to 64; col. 5, lines 30 and 31; col. 5, lines 29 to 31) is directed to a process for papermaking where a suspension of fibers is drained on a wire. The suspension contains a cationic organic polymer having an aromatic group. The opponent in essence alleged that, as the process can be carried out using closed water circulations, a high conductivity due to high ionic strength is to be observed.

In this context the opponent made a reference to **D20** (page 1, table 1) and asserted that the conductivity of a 100% OCC (="old corrugated container") closed system is 11.79 mS/cm while even in a 100% OCC open system the conductivity is 2.4 mS/cm which is also in the range according to the opposed patent.

These arguments, however, are equally rejected by the division. Whilst it is correct that the closing degree of paper machines today varies, however that there is a trend towards a higher degree of closure, the reasoning given above applies also *mutatis mutandis* to this prior art: there are too many unknown factors to be taken into account, parameters which cannot be assumed with certainty. Moreover, it should be remembered that the study according to **D20** was conducted on only 8 mills, in a particular part of the world (North America), thus being far from representative for the whole industry.

Accordingly, the subject-matter of claim 1 is novel also over **D12.**

In summary: There is no unambiguous general disclosure in either of **D1, D2** or **D12** of the subject mater of claim 1 of the disputed patent. In particular there is no disclosure either explicit or implicit of a conductivity value in the range of at least 2.0 mS/cm.

The reference to documents **D10', D11, D19** and **D20** can not relieve the substantial deficiencies of any one of these specific disclosures; while there might be processes in the art encompassing a higher conductivity within the range claimed, there is no evidence on file showing that they **all** do, in particular not when also including an aromatic polymer.
The fact that no other documents than those referred to above were cited by the opponent at the oral proceedings with regard to novelty confirms the opinion of the division that these other documents are further away from the subject-matter of claim 1 and therefore do not need to be discussed more in detail here.

The subject-matter of claim 1 therefore fulfils the requirements of Articles 52(1) and 54(1) and (2) EPC.

3. Inventive step

The opponent argued that the subject-matter of claim 1 is not inventive over **D1, D2, D14, D15** and **D7.**

For the assessment of inventive step (see Guidelines for Examination in the EUROPEAN PATENT OFFICE, Part C, Chapter IV-9.8) the most relevant of the cited documents is the one which not only comes close to the process steps according to claim 1 of the patent-in-suit, but also which contains pertinent information with regard to the desired property improvements (here: drainage and retention) in relation to these steps (here: the addition of the aromatic group comprising cationic organic polymer to the high

conductivity stock).

The opponent is of the opinion apparently that the closest prior art should be seen in document **D2.** The proprietors see the closest prior art in **D1.** The opposition division's view concurs with the proprietors' view.
Document **D2** is not a proper selection of the closest prior art in view of the patent-in-suit. The technical problem of **D2** is to counter the deteriorated performance of additives observed in such stocks which comprise a high level of so-called anionic trash (see page 2, line 14). There is no general disclosure of aromatic polymers increasing drainage and retention in **D2.** In fact such polymers are not even listed in the description on page 3, first full paragraph for the LMW cationic polymer.

D1 on the other hand relates to a process with the aim of obtaining high retention and drainage properties of the cellulosic suspension by the addition of a cationic organic polymer of a varying constitution.

Therefore, document **D1** is the closest prior art.

However, **D1** would not appear to make any suggestion to the effect that a cationic polymer having an aromatic group improves the drainage and retention performance on **high conductivity** stocks compared to cationic polymer having a methyl group as can be deduced from the examples of the specification of the patent-in-suit.

Therefore, and since none of the other documents on file suggests the application on high conductivity furnishes of aromatic group containing polymers, the claimed subject-matter is also based on an inventive step.

The opponent argued during the oral proceedings with regard to **D1** that polymer A is a cationic aromatic polymer and that polymers B,C and D are non-aromatic and that it would be deducible from tables 1 of page 8 when comparing polymer A with polymer D, which is a non-aromatic polymer, that the latter has a higher turbidity, i.e. lower retention. The skilled person in the

art would thus be incited by the disclosure in **D1** to add aromatic polymer to the cellulosic suspension in order to improve the retention and drainage properties.

The division disagrees with the opponent's view. The division finds the arguments presented by the proprietors based on the following in this matter more convincing:

In **D1** polymer A is a cationic aromatic polymer whereas polymers B,C and D are non-aromatic, polymers A,B and C are dispersion polymers whereas polymer D is a latex polymer, polymers A,B and D have the same concentration of 10% of aromatic monomer whereas polymer C has a concentration of 20%. Therefore the only tests that in fact are comparable are the ones involving A and B (both are dispersion polymers with the same concentration of added aromatic and non-aromatic polymer, respectively). On page 8, table I and II, however, it is discernible that for the same microparticle dosage, the turbidity is higher for polymer A than for polymer B, which means that the retention is better with polymer B (non-aromatic) than with polymer A (aromatic). These circumstances can also be seen from figures 1 and 2 of **D1** (see also **ANNEX 4** and **ANNEX 5** of the minutes).

At the oral proceedings the opponent furthermore argued that **D7**, **D14** and **D15** suggest to the skilled person in the art that he should add aromatic polymer in order to obtain better retention and drainage properties. It would be of no surprise to the skilled person that by adding such polymers retention and drainage can also be improved for highly conductive suspensions, such as those referred to earlier.

The division does not find these arguments of the opponent convincing either. Whilst these documents would all appear to relate to the use of aromatic polymers for improving properties such as retention and drainage in papermaking, a hint is missing at applying them to furnishes of a high conductivity; it is not seen why the skilled person would have done that with the expectation of reasonable success.

Thus, in summary, none of the cited documents renders obvious the subject-matter of the claimed invention, either taken alone or in combination. **D1** represents the closest prior art (however the result would also be the same when starting from **D2**, for evident reasons, as follows from below). **D1** teaches that cationic organic polymers having no aromatic group provides better drainage and retention performance than cationic organic polymers having an aromatic group.

This is also confirmed by the results of the comparison Examples 1 and 2 of the present patent. The skilled person confronted with the above identified technical problem would not arrive at the claimed subject-matter of the patent-in-suit from a reading of the disclosure in **D1.** There is no teaching either in **D1** taken alone or in combination which would suggest to the skilled person the subject-matter of claim 1. In fact a hypothetical combination would not even lead to all features of the claim; in particular, a teaching would be lacking corresponding to a conductivity of at least 2.0 mS/cm of the cellulosic fibres suspension.

As to the other prior art documents which were cited by the opponent during the preceding written proceedings, the opposition division is of the opinion that none of them would appear more relevant than those documents cited above with regard to present independent claim 1; the submissions by the parties at the oral proceedings were focused on documents **D1,D2,D10', D11, D12** and **D19,** the documents of which the opposition division can agree are the most pertinent to the claimed subject-matter.

Therefore, for the reasons as stated above, the subject-matter of the independent claim 1 of the patent as granted is inventive and meets the requirements of Article 56 and Article 52(1) EPC.

4. Dependent claims 2 to 16, which refer to preferred embodiments of claim 1, are based on the same inventive concept and derive their patentability from that of claim 1.

5. For these reasons the grounds of opposition do not prejudice the maintenance of the patent as granted. The opposition is hence rejected pursuant to Article 102(2) EPC.